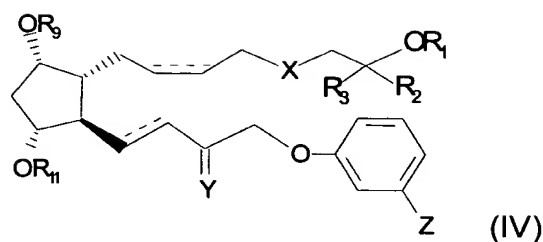


of said compound:



wherein:

$R_1 = \text{H}; \text{C}_1\text{-C}_{12}$ straight-chain or branched alkyl; $\text{C}_1\text{-C}_{12}$ straight-chain or branched acyl; $\text{C}_3\text{-C}_8$ cycloalkyl; or a cationic salt moiety;

$R_2, R_3 = \text{H}$, or $\text{C}_1\text{-C}_5$ straight-chain or branched alkyl; or R_2 and R_3 taken together may represent O;

$X = \text{O}, \text{S}$, or CH_2 ;

==== represents any combination of a single bond, or a *cis* or *trans* double bond for the alpha (upper) chain; and a single bond or *trans* double bond for the omega (lower) chain;

$R_9 = \text{H}, \text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl;

$R_{11} = \text{H}, \text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl;

$Y = \text{O}$; or H and OR_{15} in either configuration wherein $R_{15} = \text{H}, \text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl; and

$Z = \text{Cl}$ or CF_3 ;

with the proviso that when R_2 and R_3 taken together represent O, then $R_1 \neq \text{C}_1\text{-C}_{12}$ straight-chain or branched acyl; and when $R_2 = R_3 = \text{H}$, then $R_1 \neq$ a cationic salt moiety; and

with the further proviso that the following compound be excluded:

32

cyclopentane heptenol-5-*cis*-2-(3- α -hydroxy-4-m-chlorophenoxy-1-trans-butenyl)-3,5 dihydroxy, [1 $_{\alpha}$, 2 $_{\beta}$, 3 $_{\alpha}$, 5 $_{\alpha}$].

²/~~25~~. The method of claim ~~24~~¹, wherein for the compound (IV):
R₂, R₃ taken together represent O;
X = CH₂;
== represents a *cis* double bond for the alpha (upper) chain and a *trans* double bond for the omega (lower) chain;
R₉ and R₁₁ = H; and
Y = OH in the alpha configuration and H in the beta configuration.

³/~~26~~. The method of claim ~~25~~², wherein for the compound (IV): Z = CF₃.

⁴/~~27~~. The method of claim 24, wherein: R₂ = R₃ = H, or R₂ and R₃ taken together represent O; X = O or CH₂; R₉ = R₁₁ = H; Y = H and OR₁₅; and R₁₅ = H.

⁵/~~28~~. The method of claim ~~27~~⁴, wherein: R₁ = H, C₁-C₁₂ straight chain or branched alkyl or cationic salt moiety; and R₂ and R₃ taken together represent O.

⁶/~~29~~. The method of claim ~~28~~⁵, wherein the compound of formula (IV) is selected from the group consisting of 3-oxacloprostenol, 13,14-dihydrofluprostenol, and their pharmaceutically acceptable esters and salts.

⁷/~~30~~. The method of claim ~~27~~⁴, wherein: R₁ = H or C₁-C₁₂ straight chain or branched acyl; and R₂ = R₃ = H.

⁸/~~31~~. The method of claim ~~30~~⁷, wherein the compound formula (IV) is 13,14-dihydrocloprostenol pivaloate.

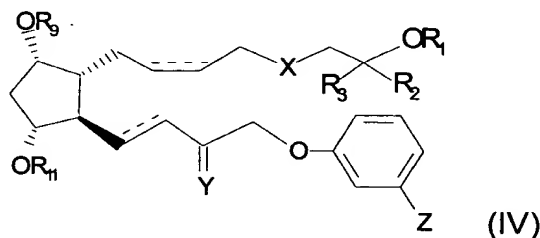
⁴/
33

9
32. The method of claim ~~24~~¹, wherein between about 0.01 and about 1000 $\mu\text{g}/\text{eye}$ of the compound is administered.

10
33. The method of claim ~~32~~⁹, wherein between about 0.1 and about 100 $\mu\text{g}/\text{eye}$ of the compound is administered.

11
34. The method of claim ~~33~~¹⁰, wherein between about 0.1 and about 10 $\mu\text{g}/\text{eye}$ of the compound is administered.

12
35. A topical ophthalmic composition for the treatment of glaucoma and ocular hypertension comprising an ophthalmically acceptable carrier and a therapeutically effective amount of a compound having the absolute stereochemical structure of the following formula (IV), and being substantially free of the enantiomer of said compound:



wherein:

$R_1 = \text{H}$; $\text{C}_1\text{-C}_{12}$ straight-chain or branched alkyl; $\text{C}_1\text{-C}_{12}$ straight-chain or branched acyl; $\text{C}_3\text{-C}_8$ cycloalkyl; or a cationic salt moiety;

$R_2, R_3 = \text{H}$, or $\text{C}_1\text{-C}_5$ straight-chain or branched alkyl; or R_2 and R_3 taken together may represent O;

$X = \text{O}, \text{S}$, or CH_2 ;

--- represents any combination of a single bond, or a *cis* or *trans* double bond for the alpha (upper) chain; and a single bond or *trans* double bond for the omega (lower) chain;

5
34

$R_9 = \text{H}$, $\text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl;

$R_{11} = \text{H}$, $\text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl;

$\text{Y} = \text{O}$; or H and OR_{15} in either configuration wherein $R_{15} = \text{H}$, $\text{C}_1\text{-C}_{10}$ straight-chain or branched alkyl, or $\text{C}_1\text{-C}_{10}$ straight-chain or branched acyl; and

$\text{Z} = \text{Cl}$ or CF_3 ;

with the proviso that when R_2 and R_3 taken together represent O , then $R_1 \neq \text{C}_1\text{-C}_{12}$ straight-chain or branched acyl; and when $R_2 = R_3 = \text{H}$, then $R_1 \neq$ a cationic salt moiety; and

with the further proviso that the following compound be excluded:

cyclopentane heptenol-5-*cis*-2-(3- α -hydroxy-4-*m*-chlorophenoxy-1-*trans*-butenyl)-3,5 dihydroxy, [1_α , 2_β , 3_α , 5_α].

13
36

The composition of claim 35, wherein for the compound (IV):

R_2 , R_3 taken together represent O ;

$\text{X} = \text{CH}_2$;

\equiv represents a *cis* double bond for the alpha (upper) chain and a *trans* double bond for the omega (lower) chain;

R_9 and $R_{11} = \text{H}$; and

$\text{Y} = \text{OH}$ in the alpha configuration and H in the beta configuration.

14
37

The composition of claim 36, wherein for the compound (IV): $\text{Z} = \text{CF}_3$.

15
38

The composition of claim 35, wherein: $R_2 = R_3 = \text{H}$, or R_2 and R_3 taken together represent O ; $\text{X} = \text{O}$ or CH_2 ; $R_9 = R_{11} = \text{H}$; $\text{Y} = \text{H}$ and OR_{15} ; and $R_{15} = \text{H}$.

6
35